

WHAT IS CLAIMED IS:

1. A method of repairing a turbine nozzle segment having at least one vane disposed between inner and outer arcuate bands, said bands each having a flowpath surface, said method comprising:

separating at least one of said outer and inner bands from said vane by cutting said vane at a location near said flowpath surface so as to expose a joining surface on said vane;

providing a newly manufactured replacement band having a flowpath surface, said replacement band including a vane stub extending from said flowpath surface of said replacement band, said vane stub having a joining surface; and

welding said replacement band to said vane at said joining surfaces.

2. The method of repairing a turbine nozzle segment of claim 1 wherein said replacement band is fabricated from a material that has enhanced material properties with respect to the material that the band being replaced is fabricated from.

3. A method of repairing a turbine nozzle segment having at least two vanes disposed between inner and outer arcuate bands, said bands each having a flowpath surface, said method comprising:

separating one of said outer and inner bands from said vanes by cutting said vanes at a location near said flowpath surface so as to expose a joining surface on said vanes;

providing a newly manufactured replacement band having a flowpath surface, said replacement band including a plurality of vane stubs extending from said flowpath surface of said replacement band, said vane stubs each having a joining surface; and

welding said replacement band to said vanes at said joining surfaces.

4. The method of repairing a turbine nozzle segment of claim 3 wherein said replacement band is fabricated from a material that has enhanced material properties with respect to the material that the band being replaced is fabricated from.

5. A method of repairing a turbine nozzle segment having at least one vane extending between inner and outer arcuate bands, said bands each having a flowpath surface, wherein at least one end of said vane is received in a socket in one of said bands and secured thereto by a brazed joint, said method comprising:

separating at least one of said outer and inner bands and its corresponding brazed joint from said vane by cutting said vane at a location near said flowpath surface so as to expose a joining surface on said vane;

providing a newly manufactured replacement band having a flowpath surface, said replacement band including a vane stub extending from said flowpath surface of said replacement band, said vane stub having a joining surface; and

welding said replacement band to said vane at said joining surfaces.

6. The method of repairing a turbine nozzle segment of claim 5 wherein said replacement band is fabricated from a material that has enhanced material properties with respect to the material that the band being replaced is fabricated from.

7. A method of repairing a turbine nozzle segment having a pair of vanes extending between arcuate inner and outer bands, said bands each having a flowpath surface, wherein opposite ends of each of said vanes are received in sockets disposed in said bands and secured thereto by brazed joints, said method comprising:

separating said outer band and its corresponding brazed joints from said vanes by cutting said vanes at a location near said flowpath surface of said outer band so as to expose a joining surface on each of said vanes;

providing a newly manufactured outer replacement band having a flowpath surface, said outer replacement band having a pair of vane stubs extending from said flowpath surface of said outer replacement band, each of said vane stubs having a joining surface; and

welding said outer replacement band to said vane at said joining surfaces.

8. The method of repairing a turbine nozzle segment according to claim 7 further comprising:

separating said inner band and its corresponding brazed joints from said vanes by cutting said vanes at a location near said flowpath surface of said outer band so as to expose a joining surface on each of said vanes;

providing a newly manufactured inner replacement band having a flowpath surface, said replacement band including a pair of vane stubs extending from said flowpath surface of said inner replacement band, each of said vane stubs having a joining surface; and

welding said inner replacement band to said vanes at said joining surfaces.

9. The method of repairing a turbine nozzle segment of claim 7 wherein said outer replacement band is fabricated from a material that has enhanced material properties with respect to the material that the band being replaced is fabricated from.

10. The method of repairing a turbine nozzle segment of claim 8 wherein said inner band is fabricated from a first material, and said outer band, said vanes, and said inner replacement band are fabricated from a second material, said second material having enhanced material properties with respect to said first material.